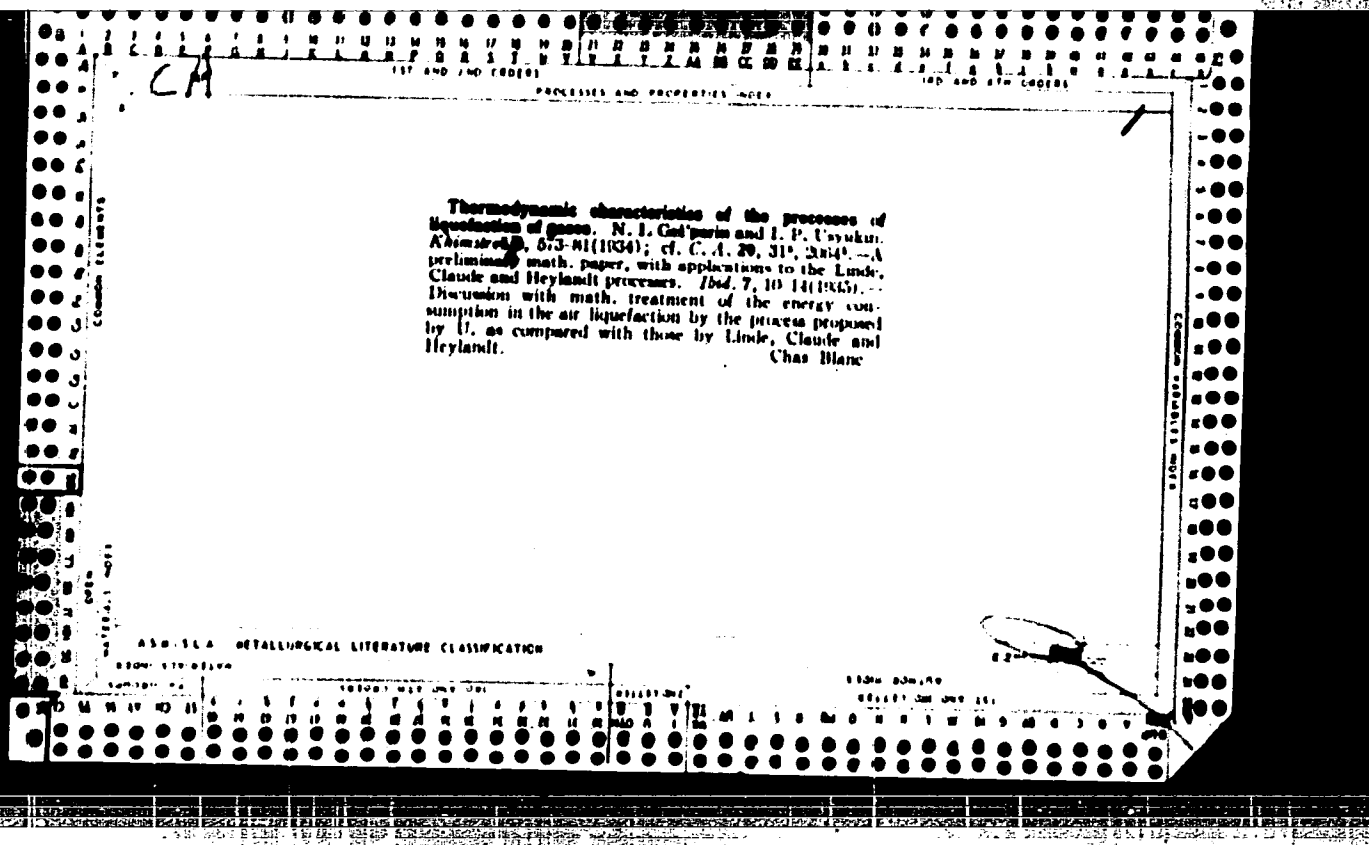


GEL'FERIN, N.B., kand. tekhn. nauk; ORLOV, G.M., kand. tekhn.  
nauk, retsenzent; SNOPOV, M.A., inzh., red.

[Specialization, overall mechanization, and automation in  
foundries] Spetsializatsiia, kompleksnaia mekhanizatsiia  
i avtomatizatsiia liteinykh tsekhov. Moskva, Mashino-  
stroenie, 1964. 230 p. (MIRA 17:11)

AYNSHTEIN, S.S.; GEL'FERIN, M.I.

Heat exchange between fluidized bed and surface. Khim.prom. 41  
no.6:416-422 Je '65. (MIRA 18:8)



18

GALPERIN, N.I.

Concentrating salt solutions. N. I. Gal'perin and I. M. Likhonin. Russ. 44,918, Nov. 30, 1960. The salt soln. is indirectly heated by steam from the heat obtained in the neutralization of alkalis by acid.

USSR - S.S.A. METALLURGICAL LITERATURE CLASSIFICATION



PROCESS AND PROPERTIES INDEX																
<p><i>[Handwritten: ch]</i></p> <p><i>[Handwritten: 1]</i></p> <p>Heat transfer in units equipped with Field tubes. N. I. Gelfand. Khim. Mashinostroyeniye 1939, No. 4, 1-9.— The process of heat transfer in Field tubes is treated method- ically and a more complete and more simplified method for calculating the heat exchange is suggested for the following cases: (1) heating or cooling of gas passing through inner tubes and (2) heating or cooling of gas passing through the outer tubes. B. Z. Kanitschik</p>																
<p>AIR-SEA METEOROLOGICAL LITERATURE CLASSIFICATION</p> <p>100000 -10 Div Oct</p> <p>COLLECTIONS:</p>																

TITLE AND THE SUBJECT		PROCESSING AND PROPERTIES INDEX	
<p>Temperature distribution in catalyst masses of contact apparatus. N. I. Gid'gala. <i>Khim. Mashinostroyeniye</i> 1960, No. 2, 1-4. Math. treatment of temp. distribution in catalyst masses in the following cases: (1) catalyst packed in a tube, (2) annular catalyst shape between two tubes, (3) plate shape of catalyst, and (4) catalyst packed between a bundle of tubes. The cases are made with the aid of the theory of heat cond. through solids. The most advantageous construction is that in which the catalyst is within a tube washed on the outside by the cooling agent. B. Z. Kamich</p>		<p>1</p>	
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>10000 57100104</p>		<p>100000 517 001 001</p>	
<p>100000 01</p>		<p>001001 001 001 001</p>	

CA

Method for analytical calculation of processes of distillation and rectification of ideal binary mixtures. N. I. Gel'perin. *Kislovodsk*, No. 1/2, 40-7 (1947).—A method for the analytical, as distinct from graphical, calculation has been developed, as the latter becomes too inaccurate when one of the components is present in great excess. The application of this method to various types of distillation and rectification is illustrated. B. A.

CA

Methods for the analytical estimation of the process of  
rectification of binary and polycomponent liquid mixtures.  
H. N. I. G. (Moscow). *Kislovodsk* No. 6, 1-10(1947);  
Chem. Abstr. 42, 1, 1970; cf. C.A. 64, 67286. — The  
math. analytical method previously reported (cf. loc.  
cit.) for the estim. of distn. and rectification processes in  
— binary mixts. is extended to polycomponent mixts. which  
completely or partially follow the law of Henry or Raoult.  
Statistical considerations and some questions of the  
kinetics of the rectification process are discussed.  
M. G. Meere

GEL'PERIN, N. I.

"Nickel-Molybdenum Alloys, Stable in Hydrochloric Acid," Medits. Prom.,  
No. 4, 1948

GEL'PERIN, N.I. and P.N. ZMII.

Gidravlicheskie pressy v khimicheskoi promyshlennosti. Moskva, Mashgiz, 1949.  
190 p. illus.

Hydraulic presses in chemical industry.

DLC: TJI460.G4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of  
Congress, 1953

GEL'PERIN, N. I.

"Apparatus with Forced Steam Circulation," Medits. Prom., No. 1, 1949

11

4

**\*Metals [Nickel] Alloys Resistant to Hydrochloric Acid Media** N. I. Gel'perin, Yu. P. Arsenov, D. I. Drukarova, and T. S. Raitina (*Zhur. Priklad. Khim.*, 1949, **22**, (1), 45-55).—[In Russian]. Summarizes published information on the mechanical properties, corrosion resistance, heat treatment, etc., of nickel-molybdenum-iron alloys and the Hastelloys, and describes the development of a Russian Hastelloy A type alloy containing nickel 61, molybdenum 23, manganese 0.73, silicon 0.27, carbon 0.02%, balance iron. After heat treatment at 1050° C. for 5 min. and quenching in water, the mechanical properties of the hot-rolled alloy in the longitudinal and transverse directions, respectively, were: tensile strength ( $\sigma_t$ ) 91.8, 93.8 kg./mm.<sup>2</sup>; yield point ( $\sigma_s$ ) 48.5, 49.5 kg./mm.<sup>2</sup>; extension ( $\epsilon$ ) 27.1, 26.7%; hardness ( $H_v$ ) (20, 28, 25), (19, 21, 22). Without heat-treatment the values were:  $\sigma_t$  105.9, 110 kg./mm.<sup>2</sup>;  $\sigma_s$  91.8, 97.2 kg./mm.<sup>2</sup>;  $\epsilon$  19.4, 14.1%;  $H_v$  (28, 29, 31), (34, 33, 34). Metallographic examination showed that the alloy had a two-phase structure comprising a matrix of austenitic grains with irregularly distributed grains of some intermetallic compound; heat treatment brought much of this second phase into solid solution, and improved the corrosion-resistance and plasticity. Tables and graphs are given showing the results of loss-in-weight tests in HCl, HBr, and formic acid. Taking a loss of 10 g. m.<sup>2</sup> hr. as the max. permissible for a "resistant" alloy, the alloy described can be used with HCl of any concentration at temp. up to 70° C., and with formic acid of any concentration at temp. up to 100° C. (corrosion in this case is less at 100° C. than at 50° C.). With HBr, only the 20% acid at 100° C. caused significant attack; in HCl also the attack was a maximum with acids of 15-20% concentration. Corrosion tests were also carried out in acetic acid, H<sub>2</sub>SO<sub>4</sub>, alkali, and HCl containing thiourea.—(G. V. E. T.)

11/11

GEL'PERIN, N. I., BARASHKOV, S. G.

Chemistry, Medical and Pharmaceutical

Continuous processes the chemical-pharmaceutical industry. Med. prom. No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.



GEL'PERIN, N. I. and KARAPETIAN, Sh. A.

"Chlorination of Ethyl Alcohol," Zhur. Prik. Khim., Vol. 25, pp 398-409, 1952

Ordzhonikidze Chemical-Pharmacological Inst., Moscow

Jun 52

SR/Chemistry - Distillation  
Investigation of the Process of Rectification of  
Binary Mixtures in Vertical Rotating Equipment,"

I. Gel'perin, M. S. Khatsenko

"Zhur Frik Khim" Vol XXV, No 6, pp 610-615

Equipment of this type was used by A. I. Brodskiy  
[USSR] and H. C. Urey [US] for sepg isotopes. The  
app works as follows: The reflux flows downward,  
falls onto a rotating cone, is thrown off its edge  
by centrifugal force and flows by gravity as a thin  
film along a stationary cone, etc. The liquid thus  
onto another rotating cone, etc. 218732

Jun 52

Distillation (Contd)

USSR/Chemistry - Distillation (Contd)  
flows in a zigzag course, and is collected at the  
bottom, from where it flows through a tube distil-  
the distillation vat. The vapor from the top. The app  
the distillation from the bottom to the top. The app  
lotion flows from the bottom to the top. The app  
was found to have a very high sepg capacity at low  
hydraulic resistance. However, it has a low ef-  
ficiency, and is fit in practical use for this is  
quantity production only. The reason for the steam  
the low permissible linear velocity of the sta-  
tionary cones, thus interfering with the operation  
of the column. Gives a much treatment of conditions  
in the rotary distillation column. 218732

GEL'PERIN, N. I.

(CA 47 no.15:7262 '53)

GEL'PERIN, N. I. ED.

Spravochnik po razdeleniyu gazovykh smesey metodom glubokogo okhlazhdeniya  
(Reference book on the separation of gas mixtures by methods of low refrigeration,  
comp. by: I. I. Gel'perin, G. M. Zelikson i L. L. Rapoport. Moskva, Goskhimizdat,  
1953.

391 p. Diagr., Tables.

Bibliography: P. (380)-381.

SO: N/5

668.63

.G3

1. GEL'PERIN, N.I.; PEBALK, V.L.;
2. USSR (600)
4. Distillation
7. Investigation of the rectifying capacity of horizontal rotating apparatus,  
N.I. Gel'perin, V.L. Pebalk, Zhur.prikl.khim. 26 no. 1953.

4, 87-368-81

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

GEL'PERIN, N. I.

Chemical Abst.  
Vol. 48 No. 9  
May 10, 1954  
Apparatus, Plant Equipment,  
and Unit Operations

②  
Separation of binary azeotropic mixtures by method of  
stepwise rectification at two different pressures. N. I.  
Gel'perin and K. B. Noykova. *Zhur. Priklad. Khim.* 26,  
912-20 (1953). Sepn. of binary azeotropic mixts. can be  
accomplished by the method of stepwise rectification at 2  
different pressures without recourse to addn. of a 3rd com-  
ponent. This is based on the dependence of compn. of  
azeotropic mixt. on pressure and in principle is applicable to  
any binary mixt. The economy of the method increases  
with increase in difference of compn. of azeotrope with pres-  
sure. Rectification may be batch or continuous. A method  
for computation of a continuous rectification for min. and  
max. b.-p. azeotropic system is presented. Results of ex-  
ptl. work with a mixt. of water-formic acid and BuOH-  
BuOAc are given. Y. N. Bednarski

8-31-54  
gfb

GEL'PERIN, N.I.; KROKHIN, N.G.; ZELENETSKIY, N.N.

Studying the process of rectification at lowered pressures.

Report No. 1: Relation between the efficient operation of a  
bubble cap fractionating column and vapor speed. Trudy VNIISNDV  
no.2:119-127 '54. (MLRA 10:7)

(Plate towers) (Vapor pressure) (Distillation, Fractional)

GEL'PERIN, N.I.: KROKHIN, N.G.: ZELENETSKIY, N.N.

Studying the process of rectification at lowered pressures.

Trudy VNIISMDV no.2:127-129 '54. (MLRA 10:7)

(Plate towers) (Distillation, Fractional) (Vapor pressure)

GEL'PERIN, N.I.; KROKHIN, N.G.; FRUMKINA, N.S.

Studying the distillation of fatty-acid ethyl ester mixtures.  
Trudy VNIISNDV no.2:134-138 '54. (MLPA 10:7)  
(Distillation) (Fatty acids)

GEL'PERIN, N.I.; KHOKHIN, N.G.; BOGACHEVA, K.I.; ZEISENTSKIY, N.F.

Use of distillation for purifying coumarin production waste acetic  
acid. Trudy VNIISNDV no.2:138-139 '54. (MLRA 10:7)  
(Acetic acid) (Distillation) (Coumarin)

GRL'PERIN, N.I.; KROKHIN, N.G.; BORISENKO, A.T.

Distillation (cohobation) of eugenol aqueous solutions. Report No.1:  
Cohobation in cube apparatus. Trudy VNIISMDV no.2:141-146 '54.  
(MLRA 10:7)

(Distillation) (Eugenol)

GEL'FERIN, N.I.; KROFTEIN, N.G.; BOGACHEVA, K.I.

Dehydration of chrome alum aqueous solutions (Utilization of the  
production by-products). Trudy VNIISNDV no.2:165-166 '54.  
(MLRA 10:7)

(Aluma)

GEL'PERIN

/Theory, computation, and design of apparatus for the process of deodorizing oils. N. I. Gel'perin and B. N. Gel'perin. *Mashinostroyeniye* 1954, No. 4, 12-13. (1954).—Equations were developed to show the consumption of live steam by batch (I) and continuous (II) deodorizers. II has an economic advantage over I and can be designed easily and efficiently. V. N. Kravovskiy

①

Gel'perin, N.I.

200  
The effect of the state of segregation of the feed on the  
performance of continuous rectification columns. N. I.  
Gel'perin. *J. Appl. Chem.* 1953 No. 49, 1110-1112.  
(Engl. translation).—See 42, 7849d. D. M. R.

111-220

GEL'PERIN, N. T.

U S S R .

Effect of physical state of mixture supplied on the work of continuous-action rectifying columns. N. T. Gel'perin (*Zh. prikl. Khim.*, 1954, 27, 1244--1251).—The most economical working of a column is shown on theoretical grounds to be achieved when the mixture is fed in as vapour, rather than as cold or boiling liquid.

R. Twiss, ...

124-1957-1-442

Translation from: Referativnyy zhurnal, Mekhanika, 1957. Nr 1, p 56 (USSR)

AUTHORS: Gel'perin, N.I.. Vil'nits, S.A.

TITLE: The Outflow of Liquids From Standard Short Tubes and Openings With Small Diameters (Istecheniye zhidkostey iz nasadok i otverstiy malykh diametrov)

PERIODICAL: Tr. Mosk. in-ta tonkoy khim. tekhnologii, 1955, Nr 5, pp 27-36

ABSTRACT: The article describes the test set-up and proffers the results of experiments conducted for the determination of the coefficient of discharge for eight kinds of liquids from cylindrical standard tubes with diameters varying between 0.445 and 1.5 mm and apertures between 0.25 and 1.3 mm. The project was performed to conform with the conditions obtaining during the extraction of substances by means of solvents from liquid solutions at chemical industrial plants. Experimental relationships are offered in criterional form (in terms of the Reynolds number and a term consisting of a ratio of the viscous and capillary forces ) for the determination of the coeff. of discharge for solid jets and for jets broken up into detached drops, and for the determination of the boundary between these two regimens.

Card 1/1

M.S.Volynskiy

1. Fluid flow--Velocity 2. Tubes--Applications



GEL'PERIN, N. I.

USSR/Chemistry - Heat transfer agents.

FD-3367

Card 1/1      Pub. 50 - 11/20

Authors : Matveyev, I. G. (deceased), Drapkina, D. A., Vil'shau, K. V., Globus, R. L., Gel'perin, N. I.

Title : The application of hydrocarbons of the diarylmethane series as high-temperature heat transfer agents

Periodical : Khim. prom. No 7, 426-427, Oct-Nov 1955

Abstract : Describe the properties of derivatives of diphenylmethane (ditolylmethane, dixylylmethane, dicumylmethane, and tetraisopropyldiphenylmethane). Compare these properties with those of Dowtherm (presumably Dowtherm A) and come to the conclusion that the substances mentioned are superior to Dowtherm as heat transfer media. State that the diphenylmethanes in question were synthesized by condensing the appropriate hydrocarbons with formaldehyde. Add that the synthesis of ditolylmethane has been carried out on a plant scale at the Kuskov Chemical Plant and that this hydrocarbon has been successfully used since 1953 as a heat transfer agent at 280-300° under pilot-plant conditions. Three references, all USSR, two since 1940.

Institution : All-Union Scientific Research Institute of Chemical Reagents

AID P - 2278

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 4/21

Authors : Gel'perin, N. I. and K. V. Vil'shau

Title : Study of the fractional distillation in laboratory columns packed with porcelain rings

Periodical: Zhur. prikl. khim., 28, no.3, 254-261, 1955

Abstract : The porcelain ring packing proposed by the All-Union Electrotechnical Institute (im. Lenin) may be used as a standard packing material because of its high efficiency, chemical resistance and simplicity of production. A mixture of benzene with dichloroethane was used in the experiments. Five tables, 6 diagrams, no references.

Institution: All-Union Scientific Research Institute of Chemical Reagents

Submitted : 0 9, 1953

CELESTIAL, N. I.

Distr: 4E3d/4E4j

Continuous process for the hydrolysis of boric acid esters of higher aliphatic alcohols with simultaneous separation and regeneration of boric acid. B. I. Gel'man and E. N. Solov'yukha. *Khim. Nauka i Tekhn.* 1964, 1, 847-848 (1964).

The process described effects the isolation of the higher aliphatic alcs. from paraffin hydrocarbons by a modification of the Bakhinov borate ester method for borate esters of the types  $(CH_3(CH_2)_nCH_2O)_3B$  and  $(CH_3(CH_2)_nCH_2O)_2B-OH$ . Hydrogenated synthetic oil (synth. oil) of the 270-320° range yield alc. mixts. with acid nos. 6.2-5.0, OH nos. 198, 212; I nos. 4.5, 7.9; and carbonyl nos. 11.0. Total recovery of boric acid is over 67%. The process has the basic technological advantages that it: (a) carries out the entire process by use of the secondary vapor obtained by vaporizing the weak soln. of boric acid, i.e., without the expenditure of live steam; (b) effects direct recovery of over 75% of the boric acid in the aq. fraction after hydrolysis; (c) combines the process of sapon. with the process for the regeneration of boric acid from the point of view of the material balance; (d) does away with the condenser for secondary vapor and the recompressor pumps for producing a countercurrent of alc. and water to the extra. columns. App. used and the exptl. results obtained are given. P. W. Rathmann

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90-9

GELPERIN, N.Y.

**Extraction column.** N. I. Gelferina, M. P. Volynets, and G. M. Kiselevskii. *Khimiya i Tekhnika Ural'skoi Prov.* 1, 369-371 (1964).

An extn. column operating on the principle of an injection nozzle mixer is described. The exptl. app. made of glass (diagram shown) was used for the extn. of branyl nitrate in a system containing Cu nitrate and Bu<sub>4</sub>IT<sub>4</sub> (cf. Sege and Wood field, C.I. 48, 111189). The distribution coeffs. of U and Ce are tabulated for various concns. of the metal. For U these range from 10 unity at 5 g./l. to 2.6 at 100 g./l. at 19° while for Ce under these conditions the coeff. varies are 0.001 and 0.645, resp. The coeff. rises appreciably for Ce at 60° as compared to 19°. The best tailing out agent in the system is Ca(NO<sub>3</sub>)<sub>2</sub>. The distribution coeff. for U rises significantly with acidity, reaching 6.0 at 4-6 g. equiv/l. of HNO<sub>3</sub>. The extn. was run by 10% kerosene soln. of Bu<sub>4</sub>IT<sub>4</sub>. In a cascade column system of 2 columns, extn. of U reached 95% in the exptl. installation. The height of a theoretical plate (HETP) at 21.4 in. flow was 137 mm. with 1:1 phase vol. ratio.

G. M. Kiselevskii

SOV/124-58-2-2008

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 2, p 72 (USSR)

AUTHORS: ~~Gal'perin, N. I.~~, Pebalk, V. L.

TITLE: Investigation of the Aerodynamic Drag During the Motion of a Biphasic System in a Vertical Conduit (Issledovaniye aerodinamicheskogo soprotivleniya pri dvizhenii dvukhfaznoy sistemy v vertikal'nom truboprovode)

PERIODICAL: Tr. Mosk. in-ta tonkoy khim. tekhnol., 1956, Nr 6, pp 93-104

ABSTRACT: In order to investigate the pressure losses encountered in the motion of a system consisting of a liquid and solid particles with reference to the transportation of coal, the authors assembled a special rig consisting of a vertical metal pipe, a cyclone, a bin, and a feed worm. Air from an air blower was introduced at the bottom, entrained the particles which were introduced from above, carried them along the pipe, and exhausted them into the cyclone. The quantity of the coal introduced into the tube, the air flow, and the pressure drop at the top and bottom points of the tube were measured. From an analysis of the experimental results and some theoretical considerations an equation was derived for the drag coefficient of the vertical portions of the pneumatic

Card 1/2

SOV/124-58-2-2008

Investigation of the Aerodynamic Drag During the Motion of a Biphase (cont.)

transportation system. The values of the drag coefficient computed according to the formula derived differ from the experimental values by 5-7 percent. The author establishes the feasibility of operation of the air-lift with the introduction of a supplementary flow of comminuted material into an intermediate section along the height of the pipe.

U. Ts. Andres

Card 2/2

*GEL'PERIN, N.I.*

USSR / Chemical Technology. Chemical Products  
and Their Application  
Processes and Apparatus for Chemical Technology

H-2

Abs Jour: Referat Zhur - Khimiya, No. 1, 1958, 1506

Author : Gel'perin N.I., Vil'nits S.A.

Inst : Moscow Institute of Fine-Chemical Technology

Title : Dispersion of Liquids on Outflow from Nozzles  
into Air and Fluid Media.

Orig Pub: Tr. Mosk. in-ta tonkoy khim. tekhnol., 1956,  
No 6, 111-116

Abstract: An experimental study of the regularities of  
changes in the size of drops that are formed on  
outflow of liquids from small diameter nozzles  
into air, under liquid-drop conditions, and into

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USSR /Chemical Technology. Chemical Products  
and Their Application  
Processes and Apparatus for Chemical Technology

H-2

Abs Jour: Referat Zhur - Khimiya, No 1, 1958, 1506

fluids immiscible with the outflowing, under liquid-drop and jet conditions. It was found that in cases of an outflow of liquids into air and into fluid media the determinant criteria of the process are:  $Re$ ,  $K$  and  $\eta_*$ , where  $Re$  -- Reynolds criterion;  $K$  -- a new criterion proposed by the authors ( $K = W\eta / \sigma$ ),  $W$  -- outflow velocity,  $\eta$  -- viscosity,  $\sigma$  -- surface tension);  $\eta_* = (\eta_c + 5\eta_B) / \eta_B$ ,  $\eta_c$  -- viscosity of the medium,  $\eta_B$  -- viscosity of outflowing liquid. As a result of processing of experimental data on outflow of liquids into air, there was derived the correlation:  $d/D = 16.64 \cdot 10^3 K^{0.767} / (\eta_o^{1.7} Re^{0.92})$ , wherein  $d$  -- diameter of the

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USSR /Chemical Technology. Chemical Products  
and Their Application  
Processes and Apparatus for Chemical Technology

H-2

Abs Jour: Referat Zhur - Khimiya, No 1, 1958, 1506

drop,  $D$  -- diameter of nozzle aperture,  $\eta_o$  -- relative viscosity of outflowing liquid (in relation to water). On outflow of liquids into other fluid media the diameters of the drops that are formed can be determined from the correlation:  $d/D = 4600 K^{0.42} / (\eta_* Re^{0.504})$ . For the determination of phase contact surface in packing-free extraction apparatus there is proposed the equation:  $F_1 = \sqrt{\eta_* / (766.6 D)} (Re^{0.252} / K^{0.21})$ , where  $F_1$  -- total surface of all drops on dispersion of  $1 \text{ m}^3$  of liquid. It is noted that the last mentioned equation makes it possible to investigate the mass-exchange process during extraction and also serves for design calculations of packing free extraction apparatus. The assump-

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USSR /Chemical Technology. Chemical Products  
and Their Application  
Processes and Apparatus for Chemical Technology

H-2

Abs Jour: Referat Zhur - Khimiya, No 1, 1958, 1506

tion is made that criterion K plays an important part not only in the mathematical characterization of the process of outflow and of the processes of drop-formation, but also in those processes wherein alongside with the viscosity, are manifested the forces of surface tension.

Card 4/4

GEL'PERIN, N. I.

-7  
 Extraction of sulfur dioxide from industrial gases and  
 smoke. I. G. Matyev, N. I. Gel'perin, D. A. Drapkin,  
 E. I. Globus, K. V. Vil'yan, and Z. P. Grunova. U.S.-  
 S.S.R. TOR, 577, July 23, 1957. Gases and smoke are passed  
 through an absorber charged with dialkyl deriva. of benzene  
 and diphenylmethane. The absorbing soln. is subsequently  
 heated in a desorber. Thus the absorbing soln. is regener-  
 ated and concd. SO<sub>2</sub> is obtained. M. Hoshino

MT

GEL'PERIN, N.I.; FEDORENKO, N.P.

"The increasing role of chemistry in the national economy of the  
U.S.S.R." by N.N. Nekrasov. Reviewed by N.I. Gel'perin, N.P.  
Fedorenko. Khim.prom. no.5:319 J1-Ag '57. (MIRA 10:12)  
(Chemistry, Technical)  
(Nekrasov, N.N.)

GEL'FERIN, N.I., professor; ZELENETSKIY, N.N.

Effect of working pressure on the efficiency of a packed fractionating column. Khim.nauka i prom.2 no.1:91-96 '57.

(MLRA 10:4)

(Distillation apparatus)

CEL PERIN, D.I.

✓ 8593. Dependence of the power required by rubber mixers upon the filling of the working chamber, the gap, and the temperature. S. I. Gerasimov and N. O. Berezin. Kinet. i Reakts. 1957, 10, No. 5, 24-31. The best mixing results, as judged by the physical properties of the vulcanizates and their scatter, are obtained with a 4 mm. gap between the rotor rings and the chamber walls, and a batch volume of 32.6% of the chamber volume. As the gap size increases with wear, the batch volume has to be increased. The temperature of mixing and the power required decrease as the gap size increases. An equation is derived to express the dependence of the power required upon the batch volume, gap size, and temperature, for SKI and SKS 30A tread mixes. There are 11 references.

81821

GEL'PERIN, N.I.; SERGEYEVA, V.A.

Investigating heating systems for individual tire casing  
vulcanisers. Kauch.i rez. 16 no.9:22-27 S '57. (MIRA 10:12)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.  
(Vulcanisation) (Tires, Rubber)

AUTHORS: ~~Gel'perin, N. I.~~ Liakumovich, A. G., 30V/156-58-1-46/46  
~~Listopadov, M. V.~~

TITLE: Solvent Extraction in a Countercurrent Injector Column  
(Ekstraktsiya iz rastvorov v protivotochnoy inzhكتورnoy kolonne)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Khimiya i khimicheskaya tekhnologiya, 1958, Nr 1, pp. 193 - 198 (USSR)

ABSTRACT: Among the separation processes playing an important part in chemical engineering, solvent extraction is of great significance. It is based upon the laws of diffusion and of equilibrium distribution. Though related to each other, extraction, rectification, and absorption processes are not always conveniently arranged alike as regards equipment. In particular, rectifying and absorption columns will often be of very little efficiency in extraction. A search has therefore been made for more perfect designs, and for a more intensive operation of usual extraction equipment. Some of these types are mentioned (Refs 1-11). No exhaustive solution to this problem having been found until now, further research work

Card 1/4

## Solvent Extraction in a Countercurrent Injector Column SOV/156-58-1-46/46

is still of current interest. The authors have developed the column mentioned in the title, and have introduced it into large-scale use. It has no filling bodies, and is provided at both ends with an injector each. These, being directed against each other, serve for introducing the original solution, and the solvent (Fig 1). Under certain hydrodynamical conditions and structural dimensions, the injectors not only assure dispersion of the two liquid phases but also their thorough mixture by creating areas of high turbulence at both ends of the column. For testing the new extraction equipment, 4 types of this apparatus having equal working dimensions (diam. 50 mm, height 2 m) were studied. Two systems of practical interest in synthetic rubber industry were investigated: 1) a mixture of n-butylenes- acetone - water, 2) a mixture of diene hydrocarbons  $C_6$  and higher - divinyl ether with water (Fig 2). The experimental results which are given in table 1 show that the injector column has double capacity at a height at least 4 times smaller. Table 2 shows experimental results obtained with the hydrocarbon - diethyl ether - water system in all 4 column types. Furthermore two injector columns in sequence, and one column having 2 and 3 water injectors installed in

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Solvent Extraction in a Countercurrent Injector Column SOV/156-58-1-46/46

series and one injector for the original mixture, were also studied. From this the maximum capacity of the injector column may be seen especially if the solvent is fed through several injectors installed serially. Capacity increases with increasing discharge velocity of liquid from injector nozzles. Optimum dimensions of the injector were determined with the petroleum - acetic aldehyde - water system (Figs 3,4, Table 5). Large-scale use of these injector columns has fully confirmed laboratory results, and has proven that the design based on the nozzle discharge velocity was correct. There are 4 figures, 5 tables, and 11 references, 1 of which is Soviet.

ASSOCIATION: Kafedra protsessov i apparatov khimicheskoy tekhnologii Instituta tonkoy khimicheskoy tekhnologii im.M.V.Lomonosova  
(Chair of Chemical Engineering Processes and Equipment of the Institute for Fine-Chemical Engineering imeni M.V. Lomonosov)

SUBMITTED: October 9, 1957  
Card 3/4

AUTHORS: ~~Gellerman, N. I.~~, Doctor of Technical Sciences 64-58-2-6/16  
Kogan, V. B., Candidate of Technical Sciences

TITLE: Mechanical Removal of Liquid by Secondary Steam in Chemical  
Evaporators (Mekhanicheskiy unos zhidkosti vtorichnym parom  
v vyparnykh apparatakh)

PERIODICAL: Khimicheskaya Promyshlennost', 1958, Nr 2, pp. 32-37 (USSR)

ABSTRACT: In the present paper the mechanism of the liquid removal in  
boiling, as well as the influence of the construction and the  
operation mode if the chemical evaporator are investigated;  
a method of approximation for the determination of the dimensions  
of the steam chamber is worked out. Schematic representations of  
the apparatus used in the investigations are given in two  
constructional modifications. They consists of a pipe of a  
length of 1000 mm which is divided into eight segments; it is  
electrically heated and has 4 little tubes arranged at various  
heights for steam take-off. The secondary steam condenses in the  
lowest segment, while the removal of it is determined by the  
determination of the content of substance in the segment above

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64-50-2-6/16

## Mechanical Removal of Liquid by Secondary Steam in Chemical Evaporators

it. The intensity of heat and the heating temperature, the operational pressure, the kind of liquid and its concentration, as well as the height of the liquid column were changed in the course of the experiments. Water was evaporated as well as aqueous solutions of salts at various concentrations:

KCl (to 25%),  $K_2Cr_2O_7$  (to 20%),  $K_2CrO_4$  (to 25%),  $NaNO_3$  (to 40%)

and  $Na_2SO_4$  (to 25%). From a diagram of the function removal

height of steam space it can be seen that the latter can be divided into three zones: that filled with the boiling liquid, that of the thrown up liquid, and that of the thrown-up splashes. The results of observation coincide with those by M. D. Panasenko (ref 1); it was found that most of the removal takes place by the throwing-up of the liquid and not, as is often assumed, by the throwing-up of the liquid drops. From a mathematical deduction can be seen that the dynamic liquid level of non-foaming liquids is a function of the relative steam velocity. The results of the experiments on the changes of the dynamic liquid level in dependence on heat intensity, heated surface and pressure are graphically represented; here

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Mechanical Removal of Liquid by Secondary Steam in Chemical Evaporators 64-99-2-6/16

it was found that of water and salt solutions no greater values are obtained for the latter. The linear function of relative steam velocity<sup>related</sup> to the diameter of the pipe coincides with the observations by Peterson (ref 2). An explanation is given for the absence of a remarkable effect of the physico-chemical properties of liquids. From a mathematical deduction can be seen that the height reached by the liquid projected into the steam space is directly proportional to the volume stress of the evaporation level. The authors give mathematical deductions as well as graphical representations of data for the determination of the dynamic liquid level and the relative height of the steam space, corresponding to the zonal limits, from greater amounts of thrown-up liquid and splashes; from the final formula can be seen that the relative height of the steam space depends on the constructional dimensions and the operation mode of the chemical evaporator, the conditions of circulation, as well as on the above mentioned volume stress.

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Mechanical Removal of Liquid by Secondary Steam in Chemical  
Evaporators

64-98-2-6/16

There are 12 figures and 3 references, 2 of which are Slavic.

AVAILABLE: Library of Congress

1. Evaporators--Design 2. Evaporators--Performance 3. Liquids  
--Separation 4. Steam--Performance

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GEL'PERIN, N.I., doktor tekhn. nauk, prof.; KOGAN, V.B., kand. tekhn. nauk.

Mechanical entrainment of liquid by secondary vapor in evaporators.  
Khim. prom. no.2:96-101 Mr '58. (MIRA 11:5)  
(Evaporating appliances)

ZELENETSKIY, N.M.; GEL'PERIN, N.I.

Investigating the process of fractional distillation at reduced pressures. Report No.3: Effect of working pressure and vapor velocity of (mixture of ethylbenzene-chlorobenzene) on the effectiveness and hydraulic resistance of the packing column. Trudy VNIISNDV no.4:138-144 '58. (MIRA 12:5)  
(Distillation, Fractional)  
(Packed towers)

GEL'PERIN, N.I.; KROKHIN, N.G.; KISELEVA, Ye.N.

Pilot plant testing of the method of continuous extraction of  
vanillin in a spray tower. Trudy VNIISNDV no.4:151-154 '58.  
(MIRA 12:5)

(Vanillin)  
(Extraction (Chemistry))

SOV/64-58-6-10/15

AUTHORS: ~~Gel'perin, N. I.~~, Doctor of Technical Sciences, Professor,  
Kruglikov, V. Ya., Candidate of Technical Sciences,  
Aynshteyn, V. G.

TITLE: Heat Exchange Between a Pseudoliquefied Layer and the  
Surface of a Single Tube With Lengthwise and Transverse  
Circulation of Gases (Teploobmen mezhdru psevdoozhi-  
zhennym sloyem i poverkhnost'yu odinochnoy trubyy pri yeye  
prodol'nom i poporechnom obtekanii gazami)

PERIODICAL: Khimicheskaya promyshlennost', 1958, Nr 6, pp 358-363 (USSR)

ABSTRACT: In spite of the fact that the process referred to in the  
title is widely used in industry the laws governing heat  
exchange between heating surfaces and the pseudoliquefied  
layer of the solid has not been sufficiently investigated.  
The data to be found in the references about the influence  
of the geometrical parameter of the layer and the surface  
of heat exchange in the case of a steady gas circumcircula-  
tion are contradictory. The present paper describes investi-  
gations aimed at clarifying this question. It contains a sketch  
of the test plant and a description of the cylindrical re-

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SOV/64-58-6-10/15

Heat Exchange Between a Pseudoliquefied Layer and the Surface of a  
Single Tube With a Lengthwise and Transverse Circulation of Gases

actor and heating element. Temperature measurements were carried out with a millivoltmeter PPTV -1. Sand grains of different sizes were used in the tests. Among the conclusions drawn from the results there are some which are in accordance with the statements made by A. A. Voytekhov, A. P. Zinov'yeva and D. I. Orochko (Ref 5). Furthermore, data given by A. N. Planovskiy and P. I. Nikolayev (Ref 9) are referred to. The results of experiments with a transverse circumcirculation of gases are in accordance with data given by Heerden (Ref 19) and Leva (Ref 20), but contradict those furnished by Dow (Ref 21) and Brötts (Ref 22). According to Wamsley (Ref 23) and Walton (Ref 24) the heat emission coefficient reaches a maximum in the base of the pseudoliquefied layer. The dependence of the heat emission coefficient on the location of the surface of heat exchange in the boiling layer was already pointed out in the paper by Wicke (Ref 27), but no quantitative data were then given. Data furnished by Mickley (Ref 28) and Reed (Ref 29) are also given. There are 8 figures, 4 tables, and 30 references, 12 of which are Soviet.

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SOV/138-58-10-6/10

**AUTHORS:** Gul', V.Ye.; Vil'nits, S. A. ~~Gel'perin, N. I.~~ Il'in, N.S.; Kaplunov, Ya. N.; Tsarskiy, L. N. and Krasikova, G. Z.

**TITLE:** Investigation of the Possibility of Pulverizing Chilled Rubber (Razrabotka sposoba izmel'cheniya okhlazhdennykh rezin)

**PERIODICAL:** Kauchuk i Rezina, 1958, Nr 10, pp 22 - 28 (USSR)

**ABSTRACT:** Much rubber scrap is not re-used because of the difficulty of pulverizing the material. This difficulty can be overcome by chilling the rubber. The authors first review the changes in physical and mechanical properties of rubber at low temperature. Fig.1 shows maximum speed of rupture (mm/sec) against temperature for a vulcanized mixture of SKB and natural rubber. Fig.2 shows the same for SKB (Butyl) rubber. Each figure shows curves for three different rates of deformation. The maximum speed of rupture is that which occurs immediately before the specimen parts. The re-orientation of material at the point where rupture commences was studied by scribing a line across the specimens, and comparing the thickness of the line where rupture commences with the thickness of the line in the unruptured part of the stretched specimen. In Fig.4 these relative thicknesses are plot-

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## Investigation of the Possibility of Pulverizing Chilled Rubber

ted against time for specimens of SKB and natural rubber at four different temperatures. The specimens were deformed at a rate of 500 mm/min. At -53°C no re-orientation at the rupture point occurs. Fig.5 shows stress versus relative elongation for the same rubber mix at different temperatures. Fig.6a shows the relative elongation versus temperature, and Fig.6b the stress versus temperature at the moment of rupture, in each case for three different rates of deformation. In Fig.7 the work of deformation ( $\text{kg/cm}^2$ ) is plotted against temperature for SKB-50 and the same in Fig.8 for SKB-50 plus natural rubber. By comparing Figs. 2, 6 and 7 one sees that the temperature for maximum work of deformation to rupture corresponds to that for minimum speed of rupture and for maximum relative elongation at rupture. At low temperatures the low mobility of the molecular structure prevents re-orientation at the point of rupture as is seen in Fig.4; the resistance to rupture and relative elongation decrease and the speed of rupture increases. Fig.9 shows stress versus relative elongation for samples of rubber and fabric, cut from a tyre casing, at three different rates of deformation for four temperatures. These follow

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Investigation of the Possibility of Pulverizing Chilled Rubber

the same form as the plain rubber specimens in Fig.5.

In order to obtain a brittle state when pulverizing rubber and fabric materials the temperature must be lowered and the speed of pulverization or rupture must be increased. The apparatus shown in Fig.10 was constructed to determine optimum speed of deformation for pulverization. Specimens 10 - 20 mm wide and 1 - 6 mm thick are clamped to the periphery of a 200 mm disc which can be rotated at various speeds. The disc runs in an insulated tank. The specimens strike against a pin mounted on a spring, so that the force acting on the pin can be measured dynamometrically, and the energy of deformation in fracturing the specimens can be calculated. Optimum speed was found to be in the region of 3000 r.p.m. From the parameters established, the hammer-mill type of pulverizer, shown in Fig.11, was constructed. The gap between the hammers and the saw-toothed periphery of the mill casing is 1.5 - 2 mm. The mill runs at 3000 r.p.m. The mill is fed with pieces of rubber about 40 x 20 x 8 mm previously cooled in a dry ice and alcohol mixture. Pulverized material discharged through the grating at the

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## Investigation of the Possibility of Pulverizing Chilled Rubber

base of the mill was subjected to sieve analysis. Energy input was measured by a recording wattmeter. Table 1 shows results with this pulverizer for various rubber and rubber fabric materials. The size of the openings in the discharge grating was either 5 mm or 2 mm. Material was cooled to temperatures of  $-66^{\circ}$ ,  $-60^{\circ}$  and  $-50^{\circ}\text{C}$ . Time and k.w.h. to pulverize 400 gramme quantities of material are given, and the specific energy requirement in k.w.h. per metric ton of material is given in the last column. Table 2 gives the sieve analysis for the various samples for 5 mm and for 2 mm openings in the discharge grating. To complete the calculation for energy requirements, the power in k.w.h. required to cool one ton of material to temperatures between  $5^{\circ}\text{C}$  and  $-55^{\circ}\text{C}$  are given. These calculations are based on an initial temperature of  $20^{\circ}\text{C}$ ., specific heat of material  $0.5 \text{ c.cal/kg}^{\circ}\text{C}$ , and 59.5% cooling efficiency from a Freon 12-refrigeration circuit as

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SOV/138-58-10-6/10

Investigation of the Possibility of Pulverizing Chilled Rubber

in Fig.12 with a further 20% loss to air allowed for.  
There are 12 Figures, 2 Tables and 7 Soviet References

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii  
im. M. V. Lomonosova (Moscow Institute of Precision  
Chemical Technology imeni M.V. Lomonosov)

Card 5/5

NOV/66-3-6-5/43

AUTHORS: Gel'perin, N.I., Professor, Liakumovich, A.G.

TITLE: Extraction From Solutions (Ekstraktsiya iz rastvorov)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1958, Vol III, Nr 6, pp 725-735 (USSR)

ABSTRACT: Extraction from solutions is growing in importance. There are several types of extraction devices. Shelf columns are only incompletely studied (Figure 1). The industrial types of such columns are 2 m in diameter. They have more than 100 shelves, the distance between which is 45 - 125 mm. The speed of the liquids varies between 0.006 - 0.010 mm/sec. Extraction columns with grid plates are similar to rectification columns. The Koch plate (Figure 2) used in these columns has an efficiency factor of 75%. Spraying columns are hollow cylinders with sprayers at one or both ends. In [Ref. 16] a method for calculating the efficiency of these columns by means of the droplet movement in the dispersed phase is given. Injector columns have been proposed in the recent years [Ref. 27, 28]. The injectors form a fine dispersion and a zone of intensive mixing of the two phases. The height of the column has only a slight influence in its efficiency (Figure 5). Columns with inserts have a higher effi-

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Extraction From Solutions

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ciency than the above-mentioned types and are of very simple construction. The inserts are mostly Rashig rings of 6 - 50 mm in diameter. The diameter of a column with an output of 20,000 kg/h in a toluol-water system is calculated by several equations and the results are shown in Table 2. The efficiency of static extraction columns can be increased by pulsation of their content. These columns are also filled with inserts. Figure 11 shows that the best results are obtained by a high frequency and a low amplitude of the pulsations. The calculated values have been experimentally tested in a column of 600 mm in diameter, an operating height of 12 m, and 450 plates with stainless steel grids. The rotation-cylinder apparatus (Figure 18) has been investigated in [Ref. 56]. The coalescence of the droplets in these apparatuses is at a minimum. Figure 19 shows a rotation disc extractor developed by Reman [Ref. 58]. It is a continuously operating vertical column with central shaft on which horizontal discs are fastened. In Reference 67 an extractor with an output of 450

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Extraction From Solutions

SOV/63-3-6-5/43

cm<sup>3</sup>/min and 5,000 rpm has been investigated.  
There are 14 diagrams, 9 graphs, 2 tables, and 68 references,  
9 of which are Soviet, 46 English, 10 American, 1 Canadian,  
1 Indian, and 1 French.

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SOV/63-3-6-9/43

AUTHORS: Bassel', A.B., Gel'perin, N.I., Professor

TITLE: Heat Exchanging Apparatus of High Intensity (Teploobmennyye apparaty vysokoy intensivnosti)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1958, Vol III, Nr 6, pp 755-767 (USSR)

ABSTRACT: In chemical plants there are thousands of  $m^2$  of heat exchanging surface. It is important, therefore, to use in every case the most efficient type. Heat exchangers with longitudinal ribs (Figures 2 - 4) are described in [Ref. 5], their heat emission coefficient in [Ref. 8]. In many cases breaks are made in the ribs (Figure 3) in order to increase the turbulence of the air. Heat exchangers with cross ribs (Figure 5) have higher heat emission coefficients than those with longitudinal ribs [Ref. 12]. The surface of other exchangers is increased by deforming the pipes. A comparison of these exchangers with smooth pipes is given in Figure 6. The pipes of heat exchangers may be wound by corrugated metal tapes (Figure 9) [Ref. 16]. The ribbing may also be made of wire (Figure 10). The characteristic of this device is presented in Table 6. Air coolers with such a ribbing have a heat emission from 50 - 140 kcal/ $m^2$ . h. The heat emission in all exchangers may be in-

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Heat Exchanging Apparatus of High Intensity

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tensified by turbulizing inserts of various shape (Figure 11) within the pipes. If diaphragms are installed in the pipes, the heat emission is also increased. The coefficients of heat emission for exchangers with flattened tubes (Figure 13) are presented in Figure 14. The Molahon heat exchanger (Figure 18) is described in [Ref. 30]. The laminated-ribbed heat exchanger is represented by an apparatus manufactured by "Griskom Russel Co" (Figure 20) [Ref. 31]. Heat exchangers of the Collins type are used in oxygen plants. They consist of four concentric pipes (Figure 26). They have been investigated in [Ref. 36]. Laminated gas heat exchangers with wave-shaped canals (Figure 27) are described in [Ref. 45]. The survey shows that there is no universal criterium for the efficiency of heat exchangers, but that in every case the choice must be based on the characteristic of the exchanger which is most useful for the task.

There are 10 tables, 12 sets of diagrams, 10 photos, 9 graphs, and 50 references, 12 of which are Soviet, 18 English, 11 American, 8 German, and 1 French.

Card 2/2

GEL'PERIN, N.I., ALTYKIS, A.I.

Use of waste hydrogen bromide gas from the production of synthomycin.  
Med.prom. 12 no.8:13-18 Ag '58 (MIRA 11:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy  
institut imeni S. Ordzhonikidze.  
(HYDROBROMIC ACID)

GEL'PERIN, N.I.; KROKHIN, N.G.; KISELEVA, Ya.N.

Extraction from solutions by condensing vapor phase extraction agents. Zhur. prikl. khim. 31 no.7:1026-1036 J1 '58.  
(MIRA 11:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh i natural'nykh dushistykh veshchestv Ministerstva promyshlennosti i prozovol'stvennykh tovarov SSSR.  
(Extraction (Chemistry))

GEL'PERIN, N.I.; MATVYEV, I.G.; VIL'SHAU, K.V.

Absorption of  $\text{SO}_2$  and  $\text{CS}_2$  by various hydrocarbons of the  
diphenylmethane series. Zhur. prikl. khim. 31 no.9:1323-1332  
S '58. (MIRA 11:10)  
(Sulfur dioxide) (Carbon disulfide) (Absorption)

GEL'PERIN, N.I., doktor tekhn.nauk, prof.; KRAVCHENKO, I.I., inzh.

Investigating an extraction column with alternating mixer and  
and packed section. Khim.mash. no.1:28-32 Ja '59. (MIRA 12:7)  
(Packed towers)

GEL'PERIN, N.I., doktor tekhn. nauk, prof.; TYUFTIN, Ye.P., inzh.

Centrifugal filter-thickener. Khim. mash. no.6:5-9 N-D '59.  
(MIRA 13:3)

(Filters and filtration)

ZELENETSKIY, N.N., inzh.; KASHNIKOV, V.V., inzh.; VOYTKEVICH, S.A., kand.  
khim.nauk; GEL'PERIN, N.I., doktor tekhn.nauk

Continuous fractional vacuum distillation of coriander oil.

Masl.-zhir.prom. 25 no.5:29-33 '59.

(MIRA 12:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh i  
natural'nykh dushistykh veshchestv (for Zelonetskiy, Kashnikov, Voyt-  
kevich). 2. Moskovskiy institut tonkoy khimicheskoy tekhnologii im.  
M.V. Lomonosova (for Gel'perin).

(Coriander)

(Distillation, Fractional)

5(3)

SU 40-32-3-23/43

AUTHORS: Gel'perin, N.I., Altykin, A.I.

TITLE: The Effect of the Geometric Parameters of the Sorbent Layer on the Process of Sorption Purification of Corn Sugar Solutions (Vliyaniye geometricheskikh parametrov sloya sorbenta na protsess sorbtsionnoy ochistki rastvorov maisovogo sakhara)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXI, Nr 3, pp 599-603 (USSR)

ABSTRACT: Equations for the adsorption from solutions are applicable only in limited fields. This is attributable to the fact that the equations do not describe the mechanism of dynamic sorption, the physical-chemical properties of the solutions and sorbents, the geometrical parameters etc in a satisfactory way. For this purpose the sorption purification of corn sugar solutions used for the production of medicinal glucose is studied here. The columns employed were of different diameter and were packed with birch charcoal. The relation between the geometric dimension of the sorbent layer and the mass rate and its effect on the process was investigated. The ratio of the height of the sorption layer to the diameter of the column varied in the experiments from 20.4 to 67.9. A 40%-solution of corn sugar with the

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SCV/8C-52-3-23-43

The Effect of the Geometric Parameters of the Sorbent Layer on the Process of Sorption Purification of Corn Sugar Solutions

flow rates ranging from 2 to 10 ml/min was used. In the sorption purification of the sugar solution the most important role was played by the inner diffusion due to the large sizes of the sorbed molecules. There was a linear relation between the ratio: height of layer to diameter of layer, and the time of the protective action of the sorbent if the flow rate remained constant. If the flow rate increased, the time of protective action dropped sharply. There are 2 tables and 3 graphs.

SUBMITTED: July 17, 1957

Card 2/2

GEL'PERIN, N.I.; NATRADZE, A.G.; ALTYKIS, A.I.

Search for an efficient method for producing medical glucose.

Khim. i med. no, 12:5-18 '59.

(MIRA 13:10)

(GLUCOSE)

GEL'PERIN, N.I.; NATRADZE, A.G.; TOKAREVA, S.A.

Continuous-process production of barium sulfate. Khim. i med.  
no. 12:18-26 '59. (MIRA 13:10)  
(BARIUM SULFATE)

GEL'PERIN, N.I.; NATRADZE, A.G.; TOKAREVA, S.A.

Improvement in the method of obtaining santonin. Khim. i med.  
no. 12:33-40 59. (MIRA 13:10)  
(SANTONIN)

GEL'PERIN, N.I.; NOVIKOVA, K.Ye.

Separation of azeotropic binary mixtures by means of graduated  
rectification under two varying pressures. Khim. i med. no. 12:72-  
85 '59. (MIRA 13:10)

(AZEOTROPE\$)

GEL'PERIN, N.I.; IDEL'SON, Ye.M.; LIVSHITS, A.K.; ZIL'BERG, V.I.; BORISENKO, A.T.; GABRIYELOVA, L.I.

Improving methods of xanthate production. Report no.1: Preparation of potassium and sodium butyl and theyl xanthates from anhydrous alcoholates. Sbor.nauch.trud.GINSTVETMET no.16:153-169 '59.

(Xanthic acid)

(Alcoholates)

(MIRA 14:4)

GEL'PERIN, N.I.; IDEL'SON, Ye.M.; LIVSHITS, A.K.; BORISENKO, A.T.;  
GABRIYELOVA, L.I.; ZIL'BERG, V.I.

Improving methods of xanthate production. Report no.2: Preparation  
of potassium and sodium isobutyl and isoamyl xanthates from practically  
anhydrous alcoholates. Sbor.nauch.trud.GINTSVETMET no.16:170-179  
'59. (MIRA 14:4)

(Xanthic acid)

(Alcoholates)

IDEL'SON, Ye.M.; GEL'PERIN, N.I.; LIVSHITS, A.K.; GABRIYELOVA, L.I.

Improving method of xanthate production. Report no.3. Obtaining  
high-quality xanthates from water-alcohol alkali solutions. Sbor.  
nauch.trud.GINTSVETMET no.16:180-190 '59. (MIRA 14:4)  
(Xanthic acid)

DOLEZHALK, Vitezslav [Dolezalik, Vitezslav], dots., doktor; STUKHLIK, I.,  
[translator]; GEL'PERIN, N.I., prof., red.; KOROBTSOVA, N.A., red.;  
TROFIMOV, A.V., tekhn. red.

[Similitude and modeling in chemical engineering] Podobie i mo-  
delirovanie v khimicheskoi tekhnologii. Moskva, Gos. nauchno-  
tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1960. 95 p.

(MIRA 14:5)

(Chemical engineering)

(Dimensional analysis)

GERSH, Semen Yakovlevich, prof. [deceased]; GEL'PERIN, N.I., prof.,  
retsensent; MIKULIN, Ye.I., red. Prinimal uchastiye GERSH,  
V.S., inzh., red. LARIONOV, G., tekhn.red.

[Low temperature refrigeration] Glubokoe okhlazhdenie. Izd.3.,  
dop. i perer. Moskva, Gos.energ.izd-vo. Pt.2. [Design of  
machinery and apparatus, thermal calculations, description of  
units for low temperature refrigeration] Konstruktsii mashin  
i apparatov, teplovye raschety, opisanie ustanovok glubokogo  
okhlazhdeniia. 1960. 495 p. (MIRA 13:12)  
(Refrigeration and refrigerating machinery)

FEDORNIKO, Nikolay Prokof'yevich; SAVINSKIY, Esikiil Simonovich;  
ONL'PNIIN, M.I., red.; ROTOVA, R.S., red.isd-va; MULIKOVA,  
I.F., tekhn.red.

[Outline of the economics of the chemical industry of the  
U.S.S.R.] Ocherki po ekonomike khimicheskoi promyshlennosti  
SSSR. Moskva, Isd-vo "Vysshaya shkola," 1960. 358 p.

(MIRA 14:3)

(Chemical industries)

GEL'PERIN, N.I., doktor tekhn.nauk, prof.; POLOTSKIY, L.M., insh.

Investigating the process of crushing hard materials into  
fine particles in a vibration mill. Khim.mash. no.1:28-33  
Ja '60. (MIRA 13:5)

(Milling machinery)

GEL'FERIN, N.I., doktor tekhn.nauk, prof.; AYNSHTEYN, V.G., kand.tekhn.nauk;  
ZAYKOVSKIY, A.V.

Apparatus with a fluidized (boiling) bed of free-flowing material  
in a field of centrifugal forces. Khim. mash. no. 3:2-4 My-Je '60.

(MIRA 14:5)

(Fluidization)

GEL'PERIN, M. I., doktor tekhn.nauk; KVASHA, V.B.

Correlations in the process of mass exchange in the course of  
the rectification cooling of chemical reactors. Khim. prom.  
no.5:406-411 J1-Ag '60. (MIRA 13:9)  
(Mass transfer)

GEL'PERIN, N.I., prof.; ZELENETSKIY, N.N.

Vacuum rectification in the production of odorous substances. Zhur.  
VKHO 5 no.4:431-437 '60. (MIRA 13:12)  
(Odorous substances) (Distillation, Fractional)

GEL'PERIN, N.I., prof.; ARTEM'YEV, V.I.; GURDZHI, A.Ya.; GRIGOR'YEVA, N.S.

Continuous nitration in the production of amber musk. Zhur. VIKH  
5 no.4:438-442 '60. (MIRA 13:12)  
(Nitration) (Musk)

FRUMKINA, N.S.; ZELENETSKIY, N.N.; VOYTKEVICH, S.A.; GEL'PERIN, H.I.

Separation of macrocyclic lactones by the vacuum-rectification  
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1. Vsesoyuznyy nauchno-issledovatel'skiy institut dushistykh  
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(Lactones)

GEL'PERIN, N.I.; AYSHTEYN, V.G.; GEL'PERIN, E.N.; L'VOVA, S.D.

Hydrodynamic characteristics of the fluidization of granular materials  
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1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.  
Lomonosova.

(Fluidization)

(Granular materials)

KNUNYANTS, I.L., glav. red.; BAKHAROVSKIY, G.Ya., zam. glav. red.;  
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N.I., red.; DOLIN, P.I., red.; KIREYEV, V.A., red.; MEYERSON,  
 G.A., red.; MURIN, A.N., red.; POGODIN, S.A., red.; REBINDER,  
 P.A., red.; SLONIMSKIY, G.S., red.; STEPANENKO, B.N., red.;  
 BPSHTEYN, D.A., red.; VASKEVICH, D.N., nauchnyy red.; GALLE,  
 R.R., nauchnyy red.; GARKOVENKO, R.V., nauchnyy red.; GODIN,  
 Z.I., nauchnyy red.; MOSTOVENKO, N.P., nauchnyy red.;  
 LEBEDEVA, V.A., mladshiy red.; TRUKHANOVA, M.Ye., mladshiy  
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(Chemistry--Dictionaries)

GEL'PERIN, N. I.

"Determination and Maintenance of the Optimum Regime of a Temperature Field in Chemical Reactors"

Report presented at the Conference on Heat and Mass Transfer.  
Minsk, USSR, 5-10 June 61

Some data on determination and ensuring of optimum temperature field, on methods of rectification and distillation heat transfer as well as methods of reactor design and three mass transfer regime are given.

The regularities of heat transfer under the conditions of narrow tubes with fillings were investigated.

GEL'PERIN, N.I., prof., doktor tekhn.nauk; KVASHA, V.B.

Creation of optimum temperature conditions in chemical reactors.  
Khim.prom. no.1:51-56 Ja '61. (MIRA 14:1)  
(Chemical reaction—Conditions and laws)

GEL'PERIN, N.I., doktor tekhn.nauk, prof.; AYNSHTEYN, V.G., kand.tekhn.nauk;  
TIMOKHOVA, L.P.

Hydrodynamic characteristics of the fluidization of granular  
materials in conical apparatus. Khim. mash. no.4:12-15 J1-Ag '61.  
(MIRA 14:8)

(Fluidization)

GEL'PERIN, N.I.; ASSMUS, M.G.

End effect in the process of liquid extraction in an injector column.  
Khim.prom. no.4:269-274 Ap '61. (MIRA 14:4)

(Extraction (Chemistry))